Davis Division Academic Senate

Request for Consultation Responses

Report-UCD undergrad STEM underrepresented students

March 31, 2015

The enclosed report was submitted by the Committee on Affirmative Action and Diversity in August 2014. It is being distributed for review and feedback from the Davis Division standing committees.

Admissions & Enrollment

March 30, 2015 4:41 PM

Response continued on next page.

Committee on Admissions and Enrollment
Request For Consultation Response: Report – UCD STEM Underrepresented Students

The Committee on Admissions and Enrollment has reviewed the "Report – UCD STEM Underrepresented Students" and would like to highlight the following comments:

1. The Report describes various retention programs that are suffering from dwindling funds despite their demonstrated past success and notes the importance of continuity within the programs. The Committee is very concerned regarding the historical failure to sustain funding for programs and would like to stress the importance of either restoring funding for existing programs and creating conditions for sustaining this funding locally, or if new programs are developed, ensuring the funding structures are fundamentally sustainable. To ensure future sustainability, it would be beneficial to consider having a specific resource person who could consult on external grant applications where an element of the grant goes to support mentorship and training and might indirectly or directly serve as continuing source of support for campus programs. The Committee believes that reinventing similar programs every few years is wasteful and hopes that with the renewed commitment proposed in the report the campus can do better with continuity of such programs.

2. The Committee found that the data provided show several similarities between underrepresented minority (URM) students and non-URM students. First, similar percentages of URM and non-URM students initially choose to major in STEM. It appears that choice has no impact on the ultimate graduation rate of URM students and only a small effect for non-URMs, with a slightly higher graduation rate for students who begin outside STEM. Second, of the students who leave STEM majors, the breakdown between those graduating outside STEM and leaving with no degree is similar.

3. The Committee found that the two main differences between the URMs and the non-URMs were the dramatically higher rate of URMs leaving STEM and the overall lower graduation rate for URMs. The latter is actually a larger effect for those who start outside STEM than for those who start within STEM. Addressing the resulting retention issues appears the natural focus for work with matriculated URM students.

4. The Committee would like to note that it would have been beneficial to review similar STEM Retention data found in Figure 3 for first-generation college students and students from low-API schools. Such information would have prompted discussion on how much of the movement of URMs out of STEM could be attributed to those two factors which may point to underpreparedness for STEM coursework as opposed to lack of community within the major, which is clearly an issue for female students in physical sciences. Having access to this data would assist in sorting out these matters, as they

would be addressed in different ways. Such data could also be helpful for admissions – if the campus has programs that work well for less-privileged students with particular admissions characteristics, admissions should take such information into account in selecting students most likely to succeed.

The Committee wanted to reference certain anomalies found in the Report. In the paragraph immediately above Figure 2 and in the caption of Figure 3, there is a comment that states, "of the ~60% of URM students who started in STEM and did not persist in STEM, 46% graduated with non-STEM degrees after 6 years (173/374*100=46%)..." Given the denominator that was used in this calculation, the accurate text would be, "of the ~70% of URM students who started in STEM and graduated within 6 years, 46% graduated outside of STEM fields (173/374*100=46%)..."

Also, in Figure 5 ("Preliminary Data"), it is unclear how the 2012 cohort can have any persistence rate for 2011-12. For the purpose of the review, the Committee operated under the impression that the "2011-12" and "2012-13" columns referred to first-year and second-year retention.

Council of School & College Faculty Chairs (LS: MATH/PHY SCI)

February 9, 2015 3:36 PM

The Letters & Science Executive Committee is disturbed by what seems to be a persistent pattern reported in this document. Both MURRPS and BUSP were started largely with federal funding, but with the understanding that this was seed money and that the programs should be "institutionalized." In both cases, when the external money declined, the university failed to replace it with internal funds, and both programs were severely weakened. The LFA is reported to be funded by "seed money from the Chancellor's Office." What happens when this "seed money" runs out?

Programs of this sort are not money-makers, and should not be expected to spend their time fund-raising. If the university is serious about this matter, it must provide a central source of funds, and not leave programs at the mercy of the whims of external agencies and the state of the federal budget.

Graduate Council

April 2, 2015 1:36 PM

Response continued on next page.

UC DAVIS: ACADEMIC SENATE
GRADUATE COUNCIL

March 31, 2015

RFC: Report – UCD Undergrad STEM Underrepresented Students

The Graduate Council, based on a memo from its APD Committee, forwards their recommendations for the aforementioned RFC.

The Academic Planning and Development (APD) Committee met on March 10, 2015, and considered the UCD Report – Undergrad STEM Underrepresented Students. It formed an ad-hoc committee to comment on the report.

Generally, the APD sees the report as having several applications to graduate education. It would be a good idea for the report and its topics, format, and methods, focused on undergraduates, to be replicated for graduate and professional students. This is because similar issues associated with diversity, such as persistence, retention, campus climate, sustainable funding, mentorship effectiveness, and planning for improved /additional diversity programs are in common for both undergraduate and graduate education.

APD notes that some aspects of diversity issues in graduate education issues are seriously addressed by the Office of Graduate Studies (OGS). Recently, two Diversity Officers were added to OGS, one of whom is focused on STEM. That officer is responsible for providing overall direction and implementation of a student recruitment and retention plan for students whose backgrounds enhance the diversity of graduate education.

For Part III of the report, APD identified several additional programs that could be included, such as some programs that are administered by the Office of Graduate Studies: the McNair Scholars Program, UC LEADS, and the Guardian Professionals Program. The UC Davis McNair Scholars Program is a two-year program funded by TRIO and the U.S. Department of Education. It is designed to encourage students from groups often underrepresented in graduate programs to pursue doctoral degrees. About 20 UC Davis undergraduates and incoming transfer students are selected each year to participate in academic year and summer activities. The Leadership Excellence Through Advanced Degrees (UC LEADS) is a two-year program designed to identify educationally or economically disadvantaged undergraduates in science, mathematics or engineering who show promise of succeeding in doctoral degree programs. The Guardian Professions Program is housed in the Office of Graduate Studies and is an expansion of the UC Davis School of Education's successful Guardian Teachers Program, which provides former foster youth with an opportunity to pursue a master's degree and teaching credential at UC Davis.

Other programs that did not seem to be included in the report are:

The UC Davis Summer Poverty Research Engagement Experience (UCD SPREE) engages undergraduate students from Historically Black Colleges and Universities majoring in economics, psychology, sociology and education to conduct summer research at the Davis main campus in a program hosted by the Center for Poverty Research (CPR) and sponsored by the Office of Graduate Studies.

The California Alliance for Minority Participation (CAMP), which serves underrepresented students seeking bachelor's degrees in chemistry, engineering, mathematics, physics, or other sciences, and are interested in conducting undergraduate research.

UC Davis ADVANCE, an Institutional Transformation grant that began in September of 2012, is supported by the National Science Foundation's ADVANCE Program which aims to increase the participation and advancement of women in academic science and engineering careers.

In addition, there are several specific initiatives funded by the University of California Office of the President, and the UC Davis College of Biological Sciences, College of Agricultural and Environmental Sciences, and Division of Social Sciences to help Howard University undergraduates prepare for admissions to specific STEM graduate programs.

Sincerely,

Kyaw Tha Paw U, Chair
Graduate Council

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C: Gina Anderson, Academic Senate Executive Director

Undergraduate Council

March 23, 2015 3:06 PM

UGC Response re UCD undergrad STEM underrepresented students

Many on Undergraduate Council support the programs discussed in the report and agree with the main points of the report. One common feature of the campus programs highlighted in the report is that they were successfully started with outside funding, which was intended as a bridge to more stable institutional support, and when that outside funding ended, there was nothing to pick up the slack. All too often at UCD programs limp along with little support. Perhaps one important goal for increased development funding obtained by the university would be supporting programs such as these that are shown to enhance success and retention of URMs across the campus, including STEM fields where there is a dramatic need.

Because these programs are initially funded through external agencies and because they are under some pressure by the funding agencies to reach certain statistics in a short period of time in order to get funding renewed, they are often not the best way possible to increase student retention. For example, students are often required/pressured to find an internship or research position that is the first available rather than the right fit and best training/professional development. In order to get the stipend or to stay in the program, students sometimes end up washing glassware and being accepted into a position without an actual project instead of actually being engaged in research projects, or finding a good mentor. Some programs do not have the resources to make sure that students find a good position or mentor.

Because the disproportionate attrition for URM happens mostly in the first year or two at UCD, programs that emphasize research experience as seniors are not likely to help these students (although they may be very helpful in encouraging URM to apply to graduate school). The focus would seem better on years one and two. It might also be that attrition in year 1 has more to do with inadequate high schools and affects not just URM. The research component starting in the summer after their freshman year can be important for students and there are also research programs that bring in students during the summer before their first year (e.g. high school), since adapting to college is a key component.

Also, existing programs are focused on just a few majors rather than all STEM areas (e.g. if they are funded in CBS or MPS they might not include COE). It is important that programs span all areas of STEM. There are some big advantages to sustained institutional support for these types of programs because the programs can be designed best for student success and retention and across all STEM disciplines, without making some potential compromises based on worries about how to get funding renewed.

Here are a few general recommendations: 1) Expand existing (e.g. MURPPS and LFA) or create new program(s) to increase faculty/staff mentoring of URM students in STEM, especially in Y1-2. 2) Increase funding for Provost's Undergraduate Fellowships, or similar programs so students are encouraged to start research and/or continue their research in the summer when they do not have courses and as many other responsibilities. Make sure that diverse students are encouraged to apply. 3) Create funding for new programs for summer research stipends for STEM (not necessarily during year). Many students, especially URM are looking for programs on other campuses instead of starting research or continuing research at UC Davis. While experiences off-campus are valuable, when students leave from UC Davis then they are not able to establish the same mentoring network and community as if they continued in a research position at UCD. They will also be less likely to publish, go to conferences, etc. 4) Promote information about supplements for research stipends for undergraduate students available to faculty who have existing NSF and NIH grants, and provide matching funds to encourage faculty to apply for these. Many faculty may not know about these so they are not applying and utilizing the resources. 5) Utilize existing development office resources specifically to help secure gifts/donation to support a new or existing program.